

(No Model.)

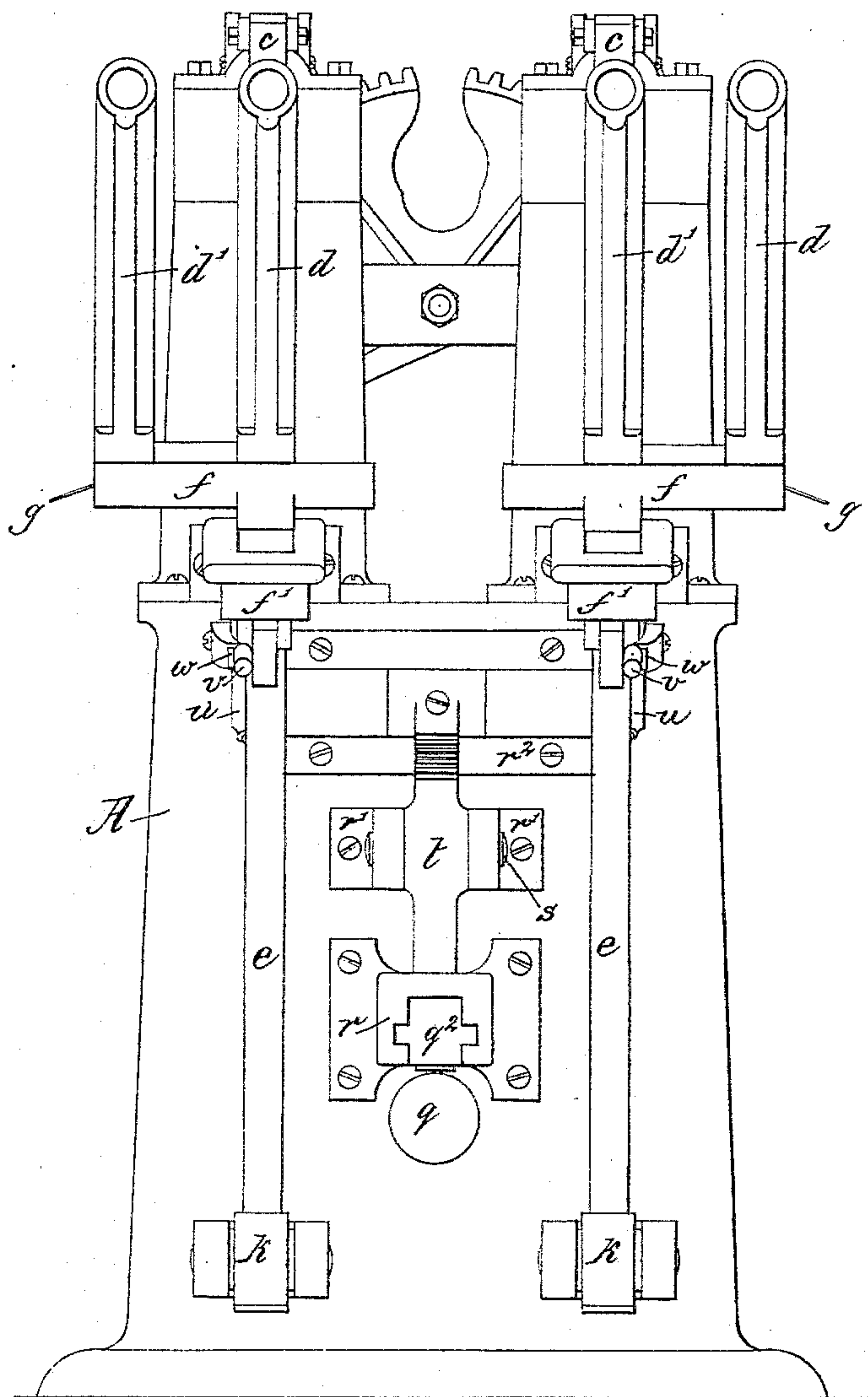
2 Sheets—Sheet 1.

C. J. ADDY.
BURNISHING MACHINE.

No. 339,511.

Patented Apr. 6, 1886.

Fig: 1.



Witnesses.
Arthur Gifford.
John F. Co. Print Co.

Inventor.
Charles J. Addy
by Crosby & Gregory Attys.

(No Model.)

2 Sheets—Sheet 2.

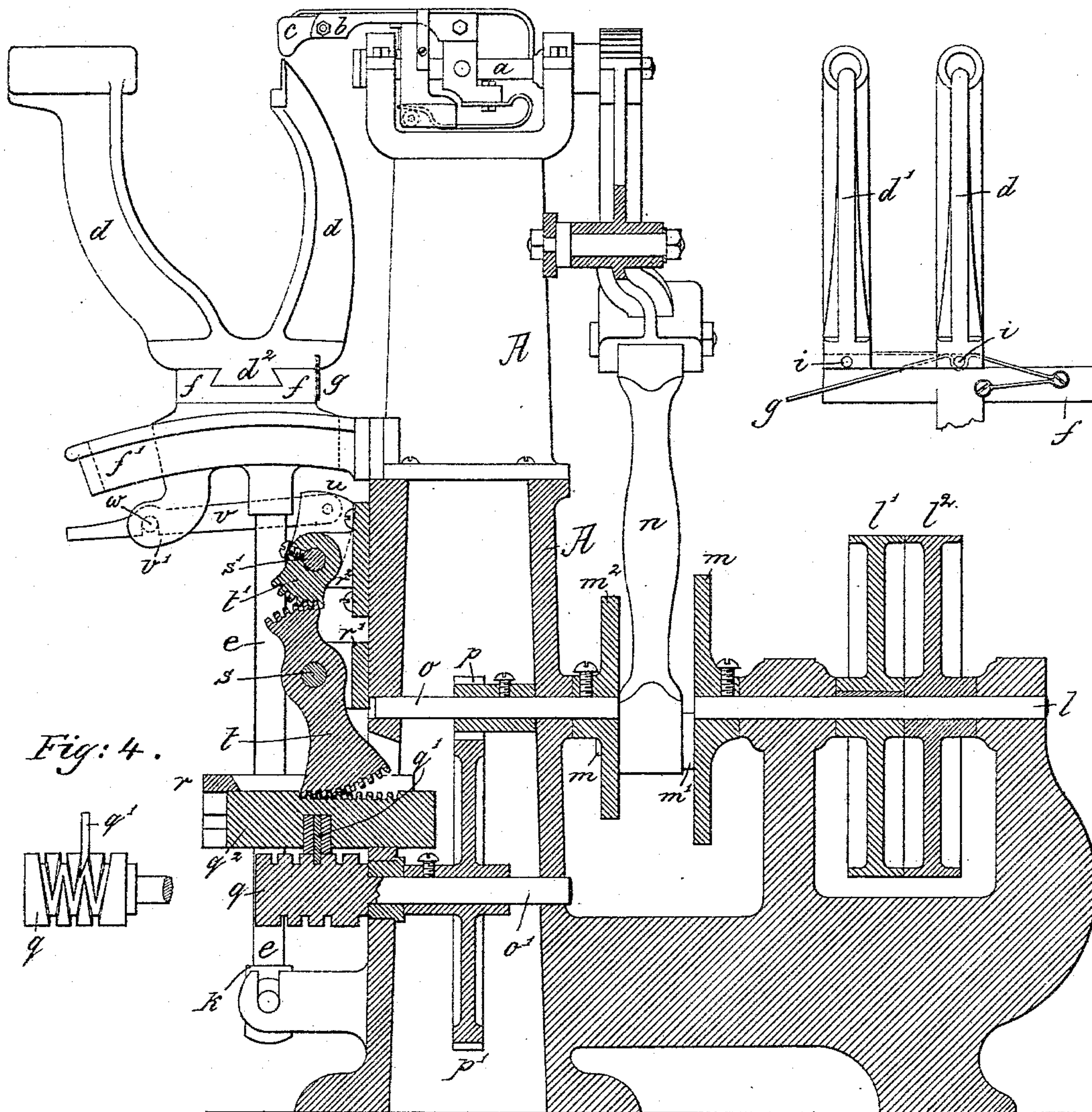
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Fig: 2.

Fig: 3.



Witnesses.
Arthur Zipperlin.
John F. C. Prinslow

Inventor.
Charles J. Addy
by Crosby & Gregory
Attys.

UNITED STATES PATENT OFFICE.

CHARLES J. ADDY, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE
TAPLEY MACHINE COMPANY, OF PORTLAND, MAINE.

BURNISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,511, dated April 6, 1886.

Application filed February 1, 1886. Serial No. 190,455. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. ADDY, of Malden, county of Middlesex and State of Massachusetts, have invented an Improvement in Burnishing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In Letters Patent No. 318,340, granted to me May 19, 1885, I have shown a double or twin machine, and in Patent No. 328,371, granted to me October 13, 1885, I have shown a single machine, with certain automatic mechanism for moving and for raising and lowering the jack.

My present improvements particularly relate to the class of machines represented in my said patents, and also as represented by the well-known "Tapley Burnishing-Machine."

My present invention has for its object to provide novel mechanism for automatically moving the shoe-carrying jack in and out under the operation of the burnishing-tool, and also to provide what may be called a "double shoe-carrying jack," or a jack so contrived that in connection with a single burnishing-tool the operator may jack one shoe while another shoe is being automatically burnished.

By the employment of a double jack in connection with a twin machine, or one having two burnishing-tools, it is obvious that an operator may keep four heels in progress of burnishing by his own unaided labor.

In the so-called "Tapley Burnishing-Machine," and machines such as described in my Letters Patents referred to, it is very desirable that the to-and-fro movement of the heel under the vibrating tool shall be uniform; but uniformity of movement cannot be obtained by a crank, for the jack moved directly by a crank has a dwell at the dead-points of the crank, which results in causing the heel to dwell in such manner that the tool acts for a greater length of time upon the top lift and then upon the heel-seat than it does upon the center of the heel, which results in crushing down and injuring both the top lift and the heel-seat.

I have found that a regular movement in which the jack is caused to travel under the tool without variation of speed from end to end is preferable to any other. Such move-

ment is herein shown as attained by or through a double screw which is steady and regular in its action; but a steady uniform movement might be produced by a cam-groove shaped to produce a differential movement, and such form of device might be used to advantage in connection with my improved jack having two or more shoe-holders.

Figure 1, in front elevation, represents a twin burnishing-machine embodying my improvements, each tool having a double jack co-operating with it. Fig. 2 represents a side elevation of such a machine with portions of the column in section, showing the operation of the automatic mechanism. Fig. 3 is a rear elevation of the double jack, and Fig. 4 is a side elevation of the double screw *q*.

The rocker-shaft *a*, the burnisher-holder *b*, and the burnishing-tool *c*, having vibratory-reciprocating motion about the axis of the said rock-shaft, are common to the Patent No. 328,371 referred to.

My improved double jacks, two being herein shown, are both alike. Each jack is composed of a post, *e*, resting in a pivoted step, *k*, and provided at its upper end, above the usual yoke, *f'*, with two shoe-holders, *d d'*, having in practice shoe-clamping devices common to the Tapley machines and to the said patents.

As herein shown, the connection between the shoe-holders *d d'* and the usual post or support, *e*, of the jack is by means of or through a plate, *f*, grooved or shaped longitudinally for the reception of or the engagement with it of a part of the base *d²* of each shoe-holder, the connection of the two (or it may be more than two shoe-holders) with the jack being such as to enable the shoe-holders to be moved both laterally as well as longitudinally with relation to the tool *c*, so that either of the two or more shoe-holders of each jack may be placed at will under, and so that the heel of the shoe carried by each of the said shoe-holders may be operated upon by the same tool. This double jack, instead of being sustained, as usual, by a post, *e*, is made to slide transversely upon a plate, *f*, which itself is sustained by post *e*, and works in and out in the usual yoke. A centering device or spring, *g*, having a recess or notch, (see Fig. 3,) is arranged upon the plate *f* in

such fashion that the recess or notch thereof will engage a pin, *i*, on each shoe-holder or half-jack, so that each such half carrying its shoe shall be properly centered under the tool *c* when moved into action under said tool.

The machine derives its motion from the main shaft *l*, having fast and loose pulleys *l'* *l''*. On the inner end of the main shaft *l* is a crank-plate, *m*, having a stud, *m'*, which, besides receiving on it the connecting-rod *n*, from which the motion of the shaft *a* is derived in usual manner, also runs through and into another crank-plate, *m''*. This crank-plate *m''* drives a shaft, *o*, working through and having its bearings on the column A. Within the column, and fastened to the shaft *o*, is a pinion, *p*, which drives a gear, *p'*, fast upon a shaft, *o'*, below the shaft *o*. The shaft *o'* has its bearings in and extends out beyond the column to the front, where, upon its end, is fastened a cylindrical double screw, *q*. Engaging the thread of the double screw *q* is a traveler, *q'*, pivoted in the lower part of a horizontal rack, *q''*, moving in and out from the column in the bearings of a bracket, *r*, bolted to the front of the column. Above the bracket *r* is the bracket *r'*, carrying the shaft *s*, upon which is mounted a double segment-gear, *t*, whose lower teeth engage the rack *q''*. The upper teeth of the double segment-gear *t* engage the segment-gear *t'*, which is fastened upon the shaft *s'*, journaled in the bracket *r''* above the bracket *r'*. On either end of the shaft *s'* is mounted a lever, *u*, to which is attached the end of rod *v*, having a notch, *v'*, arranged to catch a pin, *w*, upon the lower part of the plate *f* as it moves in and out in the yoke *f'*.

The operation of the automatic part of the machine is as follows: The shaft *l* to be driven by the pulley *l'* operates the crank-plates *m* and *m''* and the stud *m'*. The pinion *p* on the shaft *o* engages with the gear *p'* on and causes the shaft *o'* to drive the double screw *q* at any required speed. The traveler *q'*, straddling the double screw *q*, travels to and fro upon the same, carrying with it in and out from the machine the rack *q''* in its bracket *r*, and the rack *q''* drives the double segment *t*, which in turn drives the segment *t'*, which causes a slow semi-rotation of the shaft *s'*, bearing the lever *u*. The lever *u* has pivoted to it a rod, *v*, provided with a hook that engages a stud, *w*, on the plate *f*. The shoe-bearing jack is thus automatically moved in its yoke under the action of the tool *c*.

In working this machine the operator jacks a shoe, confining it in, say, the shoe-holder *d* by the usual clamping-device, and centering it by means of the spring *g*. The jack is operated to move the shoe-heel under the operation of the tool *c*. While the said heel is being automatically burnished by the said tool, the operator places another shoe upon the shoe-holder *d'*, and when the shoe upon the shoe-holder *d* has been sufficiently burnished he withdraws the jack from under the tool,

shifts the shoe-holder *d'* into its central position, and pushes it under the tool *c*. He then removes the shoe from the shoe-holder *d* and places another one upon the same in readiness for burnishing, and thus continues the operation.

It is obvious that this double-jack device is peculiarly applicable to burnishing-machines with the single head; but in cases where the leather of the heels or blacking is of such a temper as to require the lengthened operation of the burnishing-tool a double jack may be put in each of the yokes of a twin machine such as is shown in my Patent No. 318,340, thus enabling one operator to have under his eye and manipulation four shoes at the same time.

It will be noticed in my invention that the two shoe-holders *d* *d'* are loosely connected with the plate *f* of the jack, and are made movable thereon to place one or the other of the shoe-holders in position to enable the heel of the shoe held by it to be acted upon by the tool *c*.

I have herein shown a heel-burnishing tool and actuating mechanism therefor of a character common to one well-known form of machine; but I desire it to be understood that I do not desire to limit the employment of my improved double jack and the mechanism for actuating it to a machine having the particular mechanism shown for vibrating the burnishing-tool, but instead may use any well-known equivalent mechanism.

I have herein shown a double jack wherein the shoe-holders slide with relation to the plate, the connection of the shoe-holders and plate being by a tongue and groove; but I wish it to be understood that I do not desire to limit my invention to the exact manner herein shown of attaching the shoe-holders to and making them movable on other portions of the jack.

I do not broadly claim a rotating head or carrier having two or more lasts mounted thereon.

I claim—

1. In a burnishing-machine, a jack having two or more movable shoe-holders and a vibrating burnishing-tool, combined with the double screw, its traveler, and rack *q''*, and with intermediate connecting mechanism, substantially as described, to move the jack to and fro while being acted upon by the burnishing-tool, whereby the jack is given a substantially uniform reciprocation.

2. In a burnishing-machine, the pivoted post *e* and its attached plate *f*, combined with two or more shoe-holders carried by and made movable upon or with relation to the said post and plate, substantially as described.

3. In a burnishing-machine, a vibrating burnishing-tool, the pivoted post, its attached plate, and two or more shoe-holders made movable thereon, combined with a centering device to retain the said shoe-holders in proper

position on the said plate with relation to the movement of the burnishing-tool, substantially as described.

4. In a burnishing-machine, the vibrating
5 tool, the yoke or guide, the post *e*, its attached plate, two or more shoe-holders loosely connected thereto, the double screw, its traveler, the rack *q*², the double segment, combined with the segment *t'*, shaft *s*, arm *u*, and link to en-
10 gage and move the jack, substantially as described.

5. In a heel-burnishing machine, the rocker-
shaft *a*, its attached arm, and burnishing-tool
15 *c* carried by it, combined with a jack having two or more movable shoe-holders adjustably

mounted thereon, whereby the tool may be made to burnish in succession the heels of shoes laid in each of the said shoe-holders, and whereby the operator, while the heel of one shoe laid in one holder is being burnished, 20 may readily jack a shoe in the other shoe-holder, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. ADDY.

Witnesses:

G. W. GREGORY,
F. CUTTER.